

10-23

DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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File copy

MONTHLY REPORT

FILE NO. 143

FOR

APRIL - 1923.

143 - (Apr. 1923)

May 8, 1923

Dear Sir:

The following is my report on Yellowstone National Park and the operation of the park for April, 1923:

I returned to the park on May 1st, from an absence since November 4th, part of that time being spent in Washington, the balance spent on inspection trips to various western parks in my capacity as Field Assistant to the Director.

I. GENERAL CONDITIONS:

Because of warm weather during a part of the month of April the snow rapidly disappeared about Mammoth and at all lower altitudes. On the 18th of April the Hotel and Transportation Companies sent out a crew of twelve men with a Caterpillar tractor to open up the road to the Lake, at which point construction of the new Lake Hotel Annex is to be completed. Difficulty was encountered at Golden Gate and a number of places on Swan Lake Flats due to extensive drifts, and the crew had to resort to the use of T.N.T. to loosen up the snow. For ten days progress was slow due to cold weather which caused the snow to crust, at which time it was impossible to move the tractor often until late in the afternoon after the sun had softened the snow. However, the Caterpillar is now beyond Norris and it is anticipated that the balance of the trip will be comparatively easy.

Weather

The following records are quoted from the report for April of the Observer in charge of the local United States Weather Bureau at Mammoth Hot Springs, Park Headquarters:

Temperature: Monthly mean, 34.9°, is 2.1° below normal. Cold and stormy weather prevailed during the first eight days, and also from the 18th to the 24th, while the rest of the month was generally fair and warm. Temperature extremes were not unusual, the highest being 66° on the 17th and the lowest 7 on the 7th.

Precipitation: Total, 1.81 inches, is 0.43 inch above normal; the greatest April precipitation since 1917. Practically all occurred as snowfall.

Snowfall: Total 14.1 inches; normal 8.0 inches. It has been six years since a greater amount of snow fell in April, and has been exceeded but four times during the past 36 years. Most of the month's snowfall occurred during the first week, and under the influence of sunshiny weather during the week that followed, the snow cover melted rapidly and only butts of drifts remained by the 15th. The greatest depth of snow on the ground was 10.0 inches on the 2nd.

Wind: Average hourly velocity 6.9 miles; with one exception the lightest wind movement for April during the past 18 years.

Sunshine: Percentage of possible 54; normal 58.

Snow Depths

Records by rangers show the snow at various stations to be as follows:

	April 30th 1923	April 30th 1922
Bechler River	40	45
Tower Falls	0	Drifts
Soda Butte	-	6
Lake	29	31
Sylvan Pass	10	-
Snake River	37	40
Riverside	18	22
Gallatin	27	16 (24th)
Canyon	35	56
Old Faithful	30	-
Mammoth	0	Trace

Travel

The first tourists of the season, Mr. and Mrs. A. Selva, hikers of Jacksonville, Florida, entered the park April 27th and spent the night at Mammoth. They were disappointed upon finding that it would be impossible for them to tour the entire park.

Attached is a copy of the Chief Ranger's travel report for March.

Labor and Supply Market

The same scale of wages as was effective last season still exists. So far, no difficulty has been experienced in securing men for various classes of day labor. Whether or not there will be difficulty later on remains to be seen.

Contrary to last year, the price of supplies shows a general tendency upward. It is anticipated that there may be difficulty in the delivery of materials, particularly steel.

II. PERSONNEL

On April 1st there were 69 on the payrolls and on April 30th there were 86. The following list shows the number of appointees of various classes serving during the month, with a general statement of the kind of work in which they were engaged:

<u>No.</u>	<u>Class</u>	<u>Kind of work performed</u>
1	Superintendent	General administration and supervision of all activities in the park.
1	Asst. Supt.	Administration, purchasing, disbursing.
1	Asst. Supt.	Information, reports, etc.
2	Asst. Engineers	1 in charge of engineering work in park, 1 assisting.
6	Clerks	1 Financial Clerk; 1 Cost Accounting Clerk; 1 Personnel, File and Report Clerk; Clerk on Orders,

<u>No.</u>	<u>Class</u>	<u>Kind of work performed</u>
		Proposals and Vouchers, also handling Time and Payroll Work; 2 Stenographer-Typists on stenographic work.
3	Electricians	Operated power plant regular shift, including Sundays, read meters, did necessary line work.
3	Foremen	1 in charge of Headquarters Corral; 1 on carpenter and road work; one repairing dump wagons and working on road.
1	Telegraph Operator	Sent and received all Government Western Union messages, operated one shift on telephone switchboard.
2	Telephone Switchboard Operators	Operated telephone switchboard daily shifts, including Sundays. (1 under temporary appointment, intermittent service--Auth. Sec. 13th Civil Service District).
1	Master Mechanic	In charge of shops and repair to heavy road machinery.
1	Blacksmith	General blacksmith work, including shoeing of horses in shop, overhauling and repairing tools and equipment.
1	Master Painter	General shop work including painting equipment and buildings.
7	Laborers	Teaming, freighting, assisting mechanics, and miscellaneous work at headquarters.
1	Steward & Master of Transportation	In charge of all transportation and of storehouses.
1	Chief Buffalo Keeper.	In charge of tame buffalo herd.
2	Assistant Buffalo Keepers	1 in charge of hay ranch operations at Slough Creek; 1

<u>No.</u>	<u>Class</u>	<u>Kind of work performed</u>
		assisting Buffalo Keeper (resigned effective close of April 20th, 1923).
1	Master Plumber	In charge of general plumbing and water and sewer systems.
1	Auto Mechanic	On duty at power plant
1	Machinist	Repairing equipment.
1	Carpenter	Repairing buildings at head- quarters.
1	Chief Park Ranger	In charge of ranger force.
1	Fish and Game Warden	In charge of special observa- tion and reports on wild ani- mals. Trapping predatory animals.
1	First Asst. Chief Park Ranger.	In charge of Northern District.
2	Assts. Chief Park Ranger	1 on duty at Lake District. 1 in charge of Western District.
10	Park Rangers	Patrolling park borders, pro- tecting game, miscellaneous duties
5	Temporary Rangers	Patrolling, miscellaneous duties.
8	W A E Park Rangers	In charge of stations.

Leaves of Absence

Chas. Stinnett, Blacksmith, April 2, 1 day.
E. A. Allan, Electrician, April 1-18, 15 days.
Joseph Joffe, Clerk, April 2, 1 day.
A. C. D. Henman, Laborer, April 7, 14, 21 & 28, 4 days.
Fred C. Finch, Ranger, April 2-8, 6 days.
James McBride, Fish and Game Warden, April 2-14, 12 days.
R. R. Wisdom, Ranger, April 4-7, 4 days.
Clinton Ferris, Ranger, April 6-11, 5 days.
H. E. Sandel, Telegraph Operator, April 9-22, 12 days.

Sam T. Woodring, Chief Ranger, (noon) April 7, $\frac{1}{2}$ da.
 Roy X. Gray, Laborer, April 7, 1 day.
 Joseph Douglas, Asst. Chief Ranger, (noon) April 7, $\frac{1}{2}$ da.
 Deate T. White, Foreman, (noon) April 11, $\frac{1}{2}$ day.
 A. C. Neumann, Master Painter, April 12, 13, 2 days.
 Andrew R. Edwin, Clerk, April 18-25, 7 days.
 Wm. Wiggins, Master Plumber, April 11-12, 2 days.
 J. D. Fraser, Machinist, April 14, 1 day.
 Roy X. Gray, Laborer, April 14, 1 day.
 Lucy Bilkert, Clerk (noon) Apr. 16-18 (noon), 2 days.
 Berenice J. Finney, Clerk (noon) April 16-24 (noon), 7 days.
 Eivind T. Scoyen, Asst. Chief Ranger (noon) April 16-24
 (noon), 7 days.
 Wm. Purdue, Ranger, April 20, 21-2 days.
 Jos. Joffe, Clerk, April 21-23, 2 days.
 Roy X. Gray, Laborer, April 28, 1 day.
 F. R. Harriott, Laborer, (noon) April 28-30 (noon), 1 day.
 A. C. Neumann, Master Painter, April 27, 28, 2 days.
 Lucy Bilkert, Clerk, (noon) Apr. 26, $\frac{1}{2}$ day.
 Clarence Scoyen, Laborer, April 21, 23, 2 days.
 Peter E. Bilkert, Clerk (noon) April 25-26, $1\frac{1}{2}$ days.
 W. J. O'Loughlin, Laborer, April 21-23, 2 days.
 Leroy Hill, Asst. Supt., April 14-24, 9 days.
 S. T. Woodring, Chief Ranger (noon), April 24-25 (noon)
 1 day.
 Peter E. Bilkert, Clerk, April 30, 1 day.
 B. C. Davidson, Asst. Buffalo Keeper, April 6-20, 13 days.

Resignations

Anton Koncilya, Buffalo Herder, temporary, \$80 per month
 and quarters, plus increase of compensation,
 resignation effective close of March 31, 1923.

Burney C. Davidson, Assistant Buffalo Keeper, \$1200 per
 annum and quarters, plus increase of compensation,
 resignation effective close of April 20, 1923.

Furloughs

Harry R. Marshall, Auto. Mechanic, \$1320 per annum, plus
 increase of compensation and quarters, furlough-
 ed October 16, 1922, to April 15th, 1923, in-
 clusive. Extended to include June 15, 1923.

Edmund J. McKeon, Auto Mechanic, \$1320 per annum, plus
 increase of compensation, and quarters, furlough-

ed Nov. 1, 1922 to April 30, 1923, inclusive.
Extended to include June 15, 1923.

Chas. W. Enochs, Foreman, \$1800 per annum, plus increase
of compensation and quarters, furloughed Oct.
24, 1922 to April 23, 1923, inclusive. Extended
to include June 23, 1923.

In addition to the regular employees listed
above under appointment, the following were employed tem-
porarily by the day:

	<u>April 1st</u>	<u>April 30th</u>
Laborer	1	6
Plumbers	1	1
Plumber Helper	1	1
Skilled Laborer		7
Two-horse teamster		3
4-horse teamster		1
Carpenter		1
Truck Driver		1
	<u>3</u>	<u>21</u>
Appointees	<u>66</u>	<u>65</u>
Total on Payroll	69	86

III. WORK COMPLETED

(c) Miscellaneous Improvement Work:

The Master Painter worked almost entirely on
quarters but some work was done on signs and dump wagons.

The Master Plumber did general maintenance work on
the water and sewer system about headquarters, and commenced
work on the Mammoth comfort station in the public automobile
camp, enlarging the water main. The reservoir was repaired.

The Steward and Master of Transportation
worked in the storehouse preparatory to moving into the
new commissary quarters, and destroyed condemned property -

unservicable equipment. The usual amount of freighting from Gardiner was done.

Headquarters Corral: The work at the headquarters corral consisted of the regular duties about headquarters incident to the maintenance of buildings and corrals and general spring clean-up. One teamster hauled coal, wood and garbage throughout the month, and one man attended furnaces.

The Master Mechanic and his assistants overhauled Ree truck #7, Ford #15 and repaired the Kissel car used in that department. A steam shovel and Caterpillar tractor #75 was completely overhauled. Smaller repairs on other equipment were made as the work came in.

The Carpenter worked on the remodeling of the old barracks building for commissary purposes.

The Power Plant was run constantly with the results shown in comparison for April, 1922, as follows:

	<u>1922</u>	<u>1923</u>
Total current generated, in KWH	16,470	28,359
Of this, sold to public utilities		
at 5¢ per KWH	1,651	2,878
Consumed for street lighting	1,772	929
Balance, consumed in Government buildings, for power and lighting, lost on lines in transit	13,047	24,552
Peak load during month in KWH	40	62

The Telephone and Switchboard Office was open daily from 7:30 A.M. to 8:45 P.M.

Switchboard Calls

On Government Local Lines	3,443
On Hotel Company Lines	326
On Long Distance Connections	<u>135</u>
TOTAL	3,904

Telegrams

Government Sent	66
Commercial Sent	<u>28</u>

Total	94
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Government Received	36
Commercial Received	<u>37</u>

Total	73
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Office Force

The office force was busy with the usual routine work, which includes orders, payment of vouchers, preparation of accounts, reports, general correspondence, etc. 893 pieces of official mail were received and 940 were sent out during the month.

The fifth album of pictures of Yellowstone Park has just been completed by Mrs. Bilkert. All photographic plates and films have been numbered and filed in the new cabinet provided for them. There are pictures and prints of every film in the office, even to those taken by Engineer Corps, War Department in the years of 1913-15. The five albums contain scenery, geysers, persons, buildings, Tourists and game pictures.

Bechler River Survey: The office work in connection with this survey has been finished, including the maps and profile.

To complete this project the following work is required:

Heavy Clearing	60.58 acres
Medium Clearing	12.59
Light Clearing	27.00
Grubbing	50
Solid Rock Excavation	35630 cu yds.
Common Excavation	53446 cu yds.
Grader Work	72248 lin. ft.
Gravel Surfacing	3.5 miles
G. I. Culvert, 18" in place	824 lin. ft.
G. I. Culvert, 12" in place	4196 lin. ft.

G. I. Culvert, 24" in place	482 lin. ft.
G. I. Culvert, 30" in place	72 lin. ft.
Reinforced Concrete Culvert, 3' x 4', in place	126 lin. ft.
Reinforced Concrete Culvert, 4' x 6', in place	150 lin. ft.
Masonry Retaining Walls	2666.13 perch
Concrete Retaining Walls	170 cu. yds.
Log Parapet Guard Rails	6100 lin. ft.
Rock Piers	260
Single Log Piers	122
Firehole River Bridge, Concrete, 40 ft. deck girder span	
Littles Fork Bridge, Concrete, 20 ft. deck girder span	
Gregg Fork Bridge, Steel, 60 ft. span	
Fernis Fork Bridge, Concrete, 30 ft. arch span	
Bechler River Bridge, Concrete, 26 ft. deck girder spans (7)	

Ranger Force

The protective force performed the usual routine work of patrolling the park, counting and observing game, and the usual duties about the stations.

IV. WORK IN PROGRESS

(a) Construction of Physical Improvements

Yellowstone Park Camps Company: The Camps Company has made rapid strides in the completion of their new central building at Mammoth. Of the carpenter work practically all of the outside and most of the inside has been completed. The painting, plumbing and electrical work has been brought to within 75% of completion.

The old central building at Mammoth has been completely wrecked and material salvaged. Several small buildings, part of the old, have been moved to new locations to be used as help's quarters.

The latter part of the month work was started on the fifty new cabins to be erected at Mammoth, and about ten have been completed.

A new water line connection with the main reservoir feed has been started and will be finished next month.

The Hotel and Transportation Companies are continuing the work outlined in last month's reports. Rapid progress is being made.

Comfort Station, Mammoth Automobile Camp: All the underground plumbing was paced and a concrete floor laid in this comfort station which was built last fall. A cess pit was also excavated and covered to receive the sewage.

(b) Maintenance and Repair of Physical Improvements

Mammoth-Gardiner Road: This section was fully graded, rocks raked off, ditches and culverts cleaned and twenty-five loads of gravel hauled to fill low places and wash-outs. The steam shovel has been moved down to the slide below the lower bridge where it will be used to remove about 1000 cubic yards of material that has slid onto the roadway during the past winter.

Road Repairs at Jupiter Terrace: The hot water from Jupiter Terrace has increased in volume to such an extent that the ditches must be cleaned of formation about every two weeks to prevent the water from overflowing and washing out the roadway. This occurred last winter, resulting in considerable damage. About 100 loads of gravel were hauled to replace the washed out material.

Refilling over Penstock: The steel penstock where it leaves the reservoir was left uncovered last summer after painting was finished. About 30 loads of material were hauled to complete the fill.

VI. PLANS OR PROPOSED WORK

Shoshone Forest Reserve: About May 10th a road camp will be established in the Shoshone Forest to build log diversion cribs and place this section of road in condition for the season.

Upper Basin Sewer: On May 15th, or as soon thereafter as snow conditions will permit, Foreman White will move with his crew to the Upper Basin, to finish the construction and place in operation the new sewer system at that place.

Buildings in Mammoth Automobile Camp: A new laundry building will be constructed and the comfort station completed.

Sprinkler Repair: About May 10th Foreman Ferrall will start out with a crew to place the sprinkler supply tanks in operation for the season.

VII. POLICIES

No changes to note for April.

VIII. COST OF OPERATION

The cost of operation of Yellowstone National Park will be shown on the Cost Accounting Report for the month of April. This report will be forwarded shortly.

IX. OTHER MATTERS OF INTEREST

Wild Animals

General: The unusual amount of snowfall during the month effected the game more than any other condition. However, heavy snows this late in the year, as a rule, do not cause any serious damage, as the snow melts almost as soon as it falls. By the end of the month grass had started to grow in the lower elevations, and the thawing of snow uncovered a great deal of good grass on the high ridges. Forage conditions at present can be considered good.

Counts of wild animals have given us some very accurate data on the numbers of certain of our game, and the elk count the coming month should give us a working basis for future comparison regarding the herd.

Elk: Elk are moving up rapidly at present and there are only a few scattered members left in sections below 6,800 feet. Due to the fact that forage is much better

at about 7,000 feet, than in the lower valleys, the elk have moved up more rapidly than is usually the case.

The total number of elk in the Hellroaring District at present totals 3,500 head. At present the rangers are counting the Northern herd and this data will be available for next month's report.

Investigation shows that the loss this winter has been the lightest in years. The ticks and green grass have not caused the death of more than three or four head to date. With the exception of elk around Gardiner, the entire herd is in excellent shape.

Rangers at Callatin report this herd as being in rather poor condition. This is very unusual considering the fact that this is one of the best winter ranges in the park and the winter has not been severe. Further investigations will be made regarding this matter.

Mountain Sheep: There are two game animals in the park that are increasing rapidly and they are the mountain sheep and deer. Counts the past month show the following results:

Hellroaring District	76
Other sections of Northern District	110
Mt. Norris and Cache Creek	<u>62</u>
Total	248

This is no doubt the largest number of mountain sheep that have been actually counted in the park for many years.

Deer: The deer are very numerous between Mammoth and Gardiner at present. A hundred may be counted almost any evening between the two places. Most of the Mammoth pets have left headquarters and are living entirely on natural forage.

A female white-tailed deer was reported between Mammoth and Gardiner, the past month. As the only deer of this species seen the past year were two young bucks, the reporting of this one is very important.

Antelope: The antelope are now all back in the park and have been seen as far up the valley as Hellroaring.

The past winter has been very easy on this animal and our losses from all causes total five head. At the close of the winter season we had 253 in the herd and about 75% of these were males. We can hardly expect a rapid increase in these animals with such a small proportion of females.

Wild Buffalo: During the latter part of March and the first part of April, rangers made a very careful count of the wild buffalo. The Pelican Creek Valley and Lamar River section were both carefully explored. The following is the result of the count:

Pelican Creek Section:	Raven Creek	3	
			(Poor condition)
	Upper Pelican Creek	3	
	Astringent Creek	3	
	Pelican Meadows	19	
	Mist Creek	<u>1</u>	
	Total	29	
Lamar River Section:	Miller Creek	1	
	Calfee Creek	5	
	Between Miller and		
	Cold Creeks	19	
	Saddle Mountain	2	
	Between Cache &		
	Miller Creeks	2	
	Cache Creek ($\frac{1}{2}$ mile above Death Gulch)	<u>18</u>	
	Total	47	<u>76</u>

Although the total is not as large as was expected, still the general idea seems to have been prevalent that there were fewer. The herd has shown a large increase since 1905. At that time the superintendent reported a total of 30. The greatest number recorded was in 1919-20 when 90 were accounted for. Since 1916 the number has varied from 50 to 90 head with estimates that reached 150. However, the herd has maintained itself for many years and the only policy that should be followed in their regard

is to leave them strictly alone. Tourists, photographers or others, who apply for permits to see these animals, should be refused and no consideration should be great enough to allow anyone to molest them.

Moose: Assistant Chief Ranger Douglas reports seeing a total of 20 moose on his last Upper Yellowstone trip. They have not been reported in any number from other sections of the park.

Other Animals: Beams are quite numerous at present. The only damage they have done so far was the killing of a yearling elk near Mammoth and a buffalo calf at the Buffalo Ranch. Three grizzlies and a black bear attacked the latter.

The smaller animals, such as woodchucks, chipmunks, ground squirrels, etc., are very numerous.

Birds: During the past month Park Ranger Loyster has been engaged collecting bird migration data for the Bureau of Biological Survey. He found a total of about 18 species of birds, nearly all of common variety.

Predatory Animals: The feature of the month with reference to predatory animals, was the cleaning out of a wolf den near Tower Falls. The old female was killed and the five pups brought to Mammoth where they will be placed in a cage and kept for exhibition purposes during the summer.

A coyote den containing six animals was destroyed.

	Coyotes <u>Killed</u>	Wolves <u>Killed</u>
Previously reported	207	2
Accounted for during April	<u>14</u>	<u>6</u>
Total since Oct. 1st	221	8

Feeding of Game: Feeding of horses stopped at Tower Falls on the 8th and the last elk left Slough Creek on the 15th.

Hay Fed

<u>Location</u>	<u>1922</u>	<u>1923</u>
Slough Creek		4
Buffalo Ranch	75	36
Yanceys	20	4
Gardiner		0
Total	95	44
Total hay fed during the past winter		641½ tons
" " " " 1921-1922 "		1202

The records show that feeding stopped about three weeks earlier last year than in 1923.

Sickness and Medical Attention

Dr. J. M. Wolfe, National Park Service physician, reports four resident calls and 73 office calls for the month of April.

Religious Services

Regular services were held in the Yellowstone Park Chapel by Mr. Wm. Friend Day, of the Episcopal Church of Montana, on the mornings of April 1st and 29th and the evening of the 15th at eight o'clock. The Rev. O. K. Davidson, of the Lutheran Church of Bozeman, Montana, held services on April 2nd.

Amusements

Moving pictures were shown every Friday night and dances were held every Saturday night.

School

The following is the report of the private school conducted by Mrs. Laurie K. Marriott: (March 26th-Apr. 20th)

Pupils enrolled	9 boys	8 girls	17
Days attendance	178½	158½	337
Times Tardy	0	0	0

IX. RECEIPTS AND REMITTANCES

Certified Check #589, dated April 23, 1923, drawn by W. M. Nichols, on the National Bank of Montana, Helena, Montana, to the Director, National Park Service	33.16
Postal Money Order #51615, dated April 20, 1922, drawn by the Postmaster of Yellowstone Park, on the Postmaster at Washington, D. C.	2.32
Certified Check #582, dated April 12, 1923, drawn by H. W. Child, on the National Bank of Montana, Helena, Montana, to the Director, National Park Service, amount	100.00
Certified check #1037, dated April 23, 1923, drawn by W. M. Nichols, on the National Bank of Montana, Helena, Montana, to the Director, National Park Service, amount	2.82
Certified check #1484, dated April 6, 1923, drawn by Howard Hays, on the North- western National Bank, Livingston, Montana, to the Director, National Park Service, amount	<u>27.30</u>
Total	165.60

Sincerely yours,

Horace M. Albright,
Superintendent.

The Director,
National Park Service,
Washington, D. C.

Chad

[illegible]

SEASON TOTAL END OF LAST MONTH ----- 000

SEASON TOTAL TO DATE ----- C O O ✓

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

MONTHLY METEOROLOGICAL SUMMARY.

Station, **YELLOWSTONE PARK, WYO.**; month, **A P R I L**, 1923., 191 .

TEMPERATURE (Degrees Fahrenheit.)			Precipitation. (In inches and hundredths.)	Character of day.	Sunshine, percent- age.	ATMOSPHERIC PRESSURE. (Reduced to sea level; inches and hundredths.)	
Max.	Min.	Mean.				Mean	lowest
43	28	36	.30	Cloudy	8	29.94	29.48
30	21	26	.34	Cloudy	1	30.44	25
43	18	30	.06	Cloudy	43		19
39	29	34	.01	Cloudy	46	TEMPERATURE.	
44	21	32	.01	Cloudy	36	Highest	66
36	13	24	.34	Cloudy	8	date	17
38	7	22	.15	PtCloudy	58	lowest	7
40	18	29	.08	Cloudy	48	Greatest daily range	37
42	20	31	0	PtCloudy	79	Least daily range	9
52	20	36	0	Clear	100	Mean for this month in	
56	24	40	0	PtCloudy	74	1871	80
51	26	38	.03	Cloudy	24	89	43
42	22	32	0	PtCloudy	91	98	40
50	21	36	0	Clear	97	07	34
56	25	40	0	Clear	100	16	38
62	27	44	0	Clear	100	1872	81
66	30	48	0	Clear	100	90	39
55	36	46	.01	Cloudy	32	99	36
46	21	34	.19	Cloudy	12	00	42
34	14	24	T	PtCloudy	51	09	31
35	26	30	.19	Cloudy	12	10	43
36	25	30	.03	Cloudy	6	11	34
35	24	30	T	Cloudy	22	12	36
38	22	30	T	Cloudy	52	13	37
48	15	32	0	PtCloudy	99	14	38
59	23	41	0	Clear	100	15	45
63	26	44	0	Clear	95	1879	88
60	29	44	0	PtCloudy	83	Normal for this month	37.0
52	37	44	.06	Cloudy	13	Absolute maximum for this month for	36
45	30	38	.01	Cloudy	34	Absolute minimum for this month for	36
46.5	23.3	34.9	1.81		54	Average daily excess (+) or deficiency (-) of this month as compared with the normal	-2.1
						Accumulated excess (+) or deficiency (-) since January 1	-193
						Average daily excess (+) or deficiency (-) since January 1	-1.6
						PRECIPITATION.	
						Total this month	1.81
						Greatest precipitation in 24 hours	0.41
						Snow on the ground at end of month	T
						Total precipitation this month in	
						1871	80
						89	0.92
						98	0.95
						07	1.12
						16	1.05
						1872	81
						90	1.39
						99	2.30
						08	0.88
						17	2.64
						1873	82
						91	0.18
						00	1.93
						09	0.81
						18	1.59
						1874	83
						92	0.92
						01	1.08
						10	1.19
						19	1.41
						1875	84
						93	0.97
						02	2.14
						11	1.40
						20	1.33
						1876	85
						94	1.87
						03	0.80
						12	2.24
						21	1.70
						1877	86
						95	0.61
						04	0.96
						13	1.21
						22	1.15
						1878	87
						96	1.29
						05	1.52
						14	1.49
						23	1.81
						1879	88
						97	1.21
						06	1.24
						15	1.29
						24	
						Normal for this month	1.38
						Excess (+) or deficiency (-) of this month as compared with the normal	40.43
						Accumulated excess (+) or deficiency (-) since January 1	-2.75
						MEAN RELATIVE HUMIDITY (Percentage).	
						6 a. m.,	77
						12 noon	51
						6 p. m.,	51
						WIND.	
						Prevailing direction	South
						total movement	4991
						average hourly velocity	6.9
						maximum velocity (for five minutes)	30
						miles per hour, from	North
						on	12
						WEATHER.	
						Number of days, clear	7
						partly cloudy	7
						cloudy	16
						on which .01 inch, or more, of precipitation occurred	15
						MISCELLANEOUS PHENOMENA (dates of).	
						Auroras	0
						halos: solar	23
						lunar	0
						Hail	0
						sleet	1
						fog	0
						Thunderstorms	12, 29
						*Frost: light	---
						heavy	---
						killing	---

U. S. DEPARTMENT OF AGRICULTURE.

WEATHER BUREAU.

MONTHLY

METEOROLOGICAL SUMMARY.

STATION

Yellowstone Park, Wyo.

MONTH

APR 1923

, 191

c8-1660

Mean for this month in		Normal for this month		Absolute maximum for this month for		Absolute minimum for this month for		Average daily excess (+) or deficiency (-) of this month as compared with the normal		Accumulated excess (+) or deficiency (-) since January 1		Average daily excess (+) or deficiency (-) since January 1	
Year	Mean	Year	Mean	Year	Mean	Year	Mean	Year	Mean	Year	Mean	Year	Mean
1871	50	1872	51	1873	52	1874	53	1875	54	1876	55	1877	56
1878	57	1879	58	1880	59	1881	60	1882	61	1883	62	1884	63
1885	64	1886	65	1887	66	1888	67	1889	68	1890	69	1891	70
1892	71	1893	72	1894	73	1895	74	1896	75	1897	76	1898	77
1899	84	1900	85	1901	86	1902	87	1903	88	1904	89	1905	90
1906	91	1907	92	1908	93	1909	94	1910	95	1911	96	1912	97
1913	104	1914	105	1915	106	1916	107	1917	108	1918	109	1919	110
1920	117	1921	118	1922	119	1923	120	1924	121	1925	122	1926	123
1927	130	1928	131	1929	132	1930	133	1931	134	1932	135	1933	136
1934	143	1935	144	1936	145	1937	146	1938	147	1939	148	1940	149
1941	156	1942	157	1943	158	1944	159	1945	160	1946	161	1947	162
1948	173	1949	174	1950	175	1951	176	1952	177	1953	178	1954	179
1955	186	1956	187	1957	188	1958	189	1959	190	1960	191	1961	192
1962	199	1963	200	1964	201	1965	202	1966	203	1967	204	1968	205
1969	212	1970	213	1971	214	1972	215	1973	216	1974	217	1975	218
1976	225	1977	226	1978	227	1979	228	1980	229	1981	230	1982	231
1983	238	1984	239	1985	240	1986	241	1987	242	1988	243	1989	244
1990	251	1991	252	1992	253	1993	254	1994	255	1995	256	1996	257
1997	264	1998	265	1999	266	2000	267	2001	268	2002	269	2003	270
2004	277	2005	278	2006	279	2007	280	2008	281	2009	282	2010	283
2011	290	2012	291	2013	292	2014	293	2015	294	2016	295	2017	296
2018	303	2019	304	2020	305	2021	306	2022	307	2023	308	2024	309
2025	316	2026	317	2027	318	2028	319	2029	320	2030	321	2031	322
2032	329	2033	330	2034	331	2035	332	2036	333	2037	334	2038	335
2039	342	2040	343	2041	344	2042	345	2043	346	2044	347	2045	348
2046	355	2047	356	2048	357	2049	358	2050	359	2051	360	2052	361
2053	368	2054	369	2055	370	2056	371	2057	372	2058	373	2059	374
2060	381	2061	382	2062	383	2063	384	2064	385	2065	386	2066	387
2067	394	2068	395	2069	396	2070	397	2071	398	2072	399	2073	400
2074	407	2075	408	2076	409	2077	410	2078	411	2079	412	2080	413
2081	420	2082	421	2083	422	2084	423	2085	424	2086	425	2087	426
2088	433	2089	434	2090	435	2091	436	2092	437	2093	438	2094	439
2095	446	2096	447	2097	448	2098	449	2099	450	2100	451	2101	452
2102	460	2103	461	2104	462	2105	463	2106	464	2107	465	2108	466
2109	473	2110	474	2111	475	2112	476	2113	477	2114	478	2115	479
2116	486	2117	487	2118	488	2119	489	2120	490	2121	491	2122	492
2123	499	2124	500	2125	501	2126	502	2127	503	2128	504	2129	505
2130	513	2131	514	2132	515	2133	516	2134	517	2135	518	2136	519
2137	526	2138	527	2139	528	2140	529	2141	530	2142	531	2143	532
2144	540	2145	541	2146	542	2147	543	2148	544	2149	545	2150	546
2151	553	2152	554	2153	555	2154	556	2155	557	2156	558	2157	559
2158	566	2159	567	2160	568	2161	569	2162	570	2163	571	2164	572
2165	580	2166	581	2167	582	2168	583	2169	584	2170	585	2171	586
2172	593	2173	594	2174	595	2175	596	2176	597	2177	598	2178	599
2179	606	2180	607	2181	608	2182	609	2183	610	2184	611	2185	612
2186	620	2187	621	2188	622	2189	623	2190	624	2191	625	2192	626
2193	633	2194	634	2195	635	2196	636	2197	637	2198	638	2199	639
2200	646	2201	647	2202	648	2203	649	2204	650	2205	651	2206	652
2207	659	2208	660	2209	661	2210	662	2211	663	2212	664	2213	665
2214	673	2215	674	2216	675	2217	676	2218	677	2219	678	2220	679
2221	686	2222	687	2223	688	2224	689	2225	690	2226	691	2227	692
2228	699	2229	700	2230	701	2231	702	2232	703	2233	704	2234	705
2235	713	2236	714	2237	715	2238	716	2239	717	2240	718	2241	719
2242	726	2243	727	2244	728	2245	729	2246	730	2247	731	2248	732
2249	739	2250	740	2251	741	2252	742	2253	743	2254	744	2255	745
2256	753	2257	754	2258	755	2259	756	2260	757	2261	758	2262	759
2263	766	2264	767	2265	768	2266	769	2267	770	2268	771	2269	772
2270	779	2271	780	2272	781	2273	782	2274	783	2275	784	2276	785
2277	796	2278	797	2279	798	2280	799	2281	800	2282	801	2283	802
2284	809	2285	810	2286	811	2287	812	2288	813	2289	814	2290	815
2291	823	2292	824	2293	825	2294	826	2295	827	2296	828	2297	829
2298	836	2299	837	2300	838	2301	839	2302	840	2303	841	2304	842
2305	850	2306	851	2307	852	2308	853	2309	854	2310	855	2311	856
2312	863	2313	864	2314	865	2315	866	2316	867	2317	868	2318	869
2319	876	2320	877	2321	878	2322	879	2323	880	2324	881	2325	882
2326	889	2327	890	2328	891	2329	892	2330	893	2331	894	2332	895
2333	898	2334	899	2335	900	2336	901	2337	902	2338	903	2339	904
2340	912	2341	913	2342	914	2343	915	2344	916	2345	917	2346	918
2347	926	2348	927	2349	928	2350	929	2351	930	2352	931	2353	932
2354	939	2355	940	2356	941	2357	942	2358	943	2359	944	2360	945
2361	953	2362	954	2363	955	2364	956	2365	957	2366	958	2367	959
2368	966	2369	967	2370	968	2371	969	2372	970	2373	971	2374	972
2375	980	2376	981	2377	982	2378	983	2379	984	2380	985	2381	986
2382	993	2383	994	2384	995	2385	996	2386	997	2387	998	2388	999
2389	1002	2390	1003	2391	1004	2392	1005	2393	1006	2394	1007	2395	1008
2396	1010	2397	1011	2398	1012	2399	1013	2400	1014	2401	1015	2402	1016
2403	1023	2404	1024	2405	1025	2406	1026	2407	1027	2408	1028	2409	1029
2410	1036	2411	1037	2412	1038	2413	1039	2414	1040	2415	1041	2416	1042
2417	1049	2418	1050	2419	1051	2420	1052	2421	1053	2422	1054	2423	1055
2424	1058	2425	1059	2426	1060	2427	1061	2428	1062	2429	1063	2430	1064
2431	1072	2432	1073	2433	1074	2434	1075	2435	1076	2436	1077	2437	1078
2438	1080	2439	1081	2440	1082	2441	1083	2442	1084	2443	1085	2444	1086
2445	1093	2446	1094	2447	1095	2448	1096	2449	1097	2450	1098	2451	1099
2452	1106	2453	1107	2454	1108	2455	1109	2456	1110	2457	1111	2458	1112